

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
29.09.2004 Bulletin 2004/40

(51) Int Cl.7: **H04N 7/50**, H04N 5/225,
H04N 7/52, H04N 1/21

(43) Date of publication A2:
01.03.2000 Bulletin 2000/09

(21) Application number: **99306486.4**

(22) Date of filing: **17.08.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

- **Ishizuka, Shigeki**
Shinagawa-ku, Tokyo (JP)
- **Ueno, Katsuhiko**
Shinagawa-ku, Tokyo (JP)
- **Ono, Yoshihiro**
Shinagawa-ku, Tokyo (JP)

(30) Priority: **24.08.1998 JP 23731298**
24.08.1998 JP 23731198

(74) Representative: **Pratt, Richard Wilson et al**
D. Young & Co,
21 New Fetter Lane
London EC4A 1DA (GB)

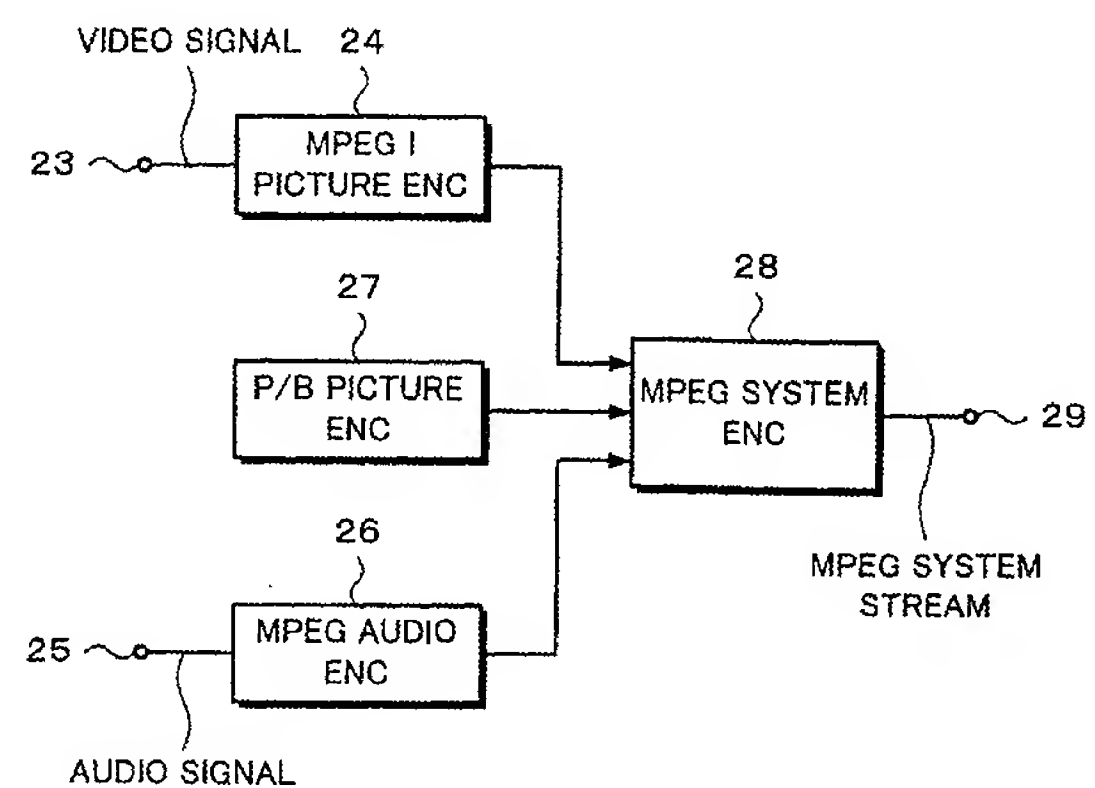
(71) Applicant: **SONY CORPORATION**
Tokyo (JP)

(72) Inventors:
• **Tomita, Yoshinori**
Shinagawa-ku, Tokyo (JP)

(54) **Electronic video camera comprising an MPEG encoder**

(57) A camera apparatus encodes a video signal received from a photographing means in MPEG video format or equivalent format and encodes an audio signal received from an audio inputting means in MPEG audio format or equivalent format. The camera comprises an I picture generating means (24) for encoding the video signal received from the photographing means corresponding to an intra-frame encoding process so as to generate an I picture in the MPEG video format or equivalent format. A picture generator (27) generates a P picture and/or a B picture in the MPEG video format or equivalent format in such a manner that moving vectors of all macro blocks thereof are zero and the chronologically preceding picture is copied as an encoded picture. An audio encoder (26) encodes the audio signal received from the audio inputting means in the MPEG audio format or equivalent format so as to generate MPEG audio data. A controlling means (28) multiplexes the I picture, the P picture or the B picture, and the MPEG audio data so as to generate the multiplexed data.

Fig. 3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 6486

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 859 511 A (SONY CORP) 19 August 1998 (1998-08-19)	11, 35	H04N7/50 H04N5/225
Y	* abstract *	1-9, 13, 15-23, 25-33, 37, 39-47	H04N7/52 H04N1/21
A	* column 3, line 11 - line 18 * * column 5, line 31 - line 40 * * column 11, line 16 - line 39 * * column 13, line 2 - line 29 * * figures 1-3 *	10, 34	
Y	WO 98/27733 A (8X8 INC) 25 June 1998 (1998-06-25)	1-9, 13, 15, 18-23, 25-33, 37, 39, 42-47	
A	* abstract *	11, 16, 17, 35, 40, 41	
	* page 5, line 31 - line 35 * * page 7, lines 9-14 * * page 13, lines 17, 18 * * figures 2A, 3A *		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Y	EP 0 595 544 A (SONY CORP) 4 May 1994 (1994-05-04)	16, 17, 40, 41	H04N
	* abstract * * column 3, line 16 - line 36 * * column 4, line 19 - line 43 * * column 6, line 24 - line 46 * * column 14, line 37 - column 15, line 28 * * claim 15 * * figures 18-20 *		
-/--			
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 28 July 2004	Examiner Sampels, M
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			

EPO FORM 1503 03/92 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 6486

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
A	GB 2 281 803 A (ASAHI OPTICAL CO LTD) 15 March 1995 (1995-03-15) * page 1, lines 2-7 * * page 4, line 15 - page 5, line 14 * * page 21, line 2 - page 22, line 3 * * page 22, line 19 - page 25, last line * * figure 6 *	1,6-9, 15-17, 20-23, 25, 30-33, 39-41, 44-47	TECHNICAL FIELDS SEARCHED (Int.CI.7)
A	RIEMANN U: "DER MPEG-2-STANDARD GENERISCHE CODIERUNG FÜR BEWEGTBILDER UND ZUGEHÖRIGER AUDIO-INFORMATION MULTIPLEX-SPEZIFIKATION FÜR DIE FLEXIBLE ÜBERTRAGUNG DIGITALER DATENSTRÖME" FERNSEH UND KINOTECHNIK, VDE VERLAG GMBH. BERLIN, DE, vol. 48, no. 10, 1 October 1994 (1994-10-01), pages 545-550,553, XP000468290 ISSN: 0015-0142 * the whole document *	1-11,13, 15-23, 25-35, 37,39-47	
A	ISHIDA T ET AL: "DEVELOPMENT OF A 64 KBPS VIDEO CODEC: NETEC VISUALINK 1000" NEC RESEARCH AND DEVELOPMENT, NIPPON ELECTRIC LTD. TOKYO, JP, no. 95, 1 October 1989 (1989-10-01), pages 69-77, XP000086151 ISSN: 0547-051X * abstract * * page 73, right-hand column, line 3 - line 26 * * figure 1 * * table 1 *	1-11,13, 15-23, 25-35, 37,39-47	
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 28 July 2004	Examiner Sampels, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 6486

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	<p>JEONG J ET AL: "Adaptive Huffman coding of 2-D DCT coefficients for image sequence compression"</p> <p>SIGNAL PROCESSING IMAGE COMMUNICATION, vol. 7, no. 1, 1 March 1995 (1995-03-01), pages 1-11, XP004047118</p> <p>ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL</p> <p>ISSN: 0923-5965</p> <p>* the whole document *</p> <p>-----</p>	16,17, 40,41	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Berlin		28 July 2004	Sampels, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.92 (P04C01)



European Patent
Office

Application Number
EP 99 30 6486

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
1-11, 13, 15-23, 25-35, 37, 39-47
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent
Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 99 30 6486

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-11,13,15,18-23,25-35,37,39,42-47

Inserting P or B pictures in MPEG video format with fixed data as P or B pictures representing that the motion vectors of all macroblocks of one entire frame are zero.

2. claims: 12,14,36,38

Video encoding with optional JPEG output in different memory location.

3. claims: 16,17,40,41

Selection of variable length code tables according to coding mode.

4. claims: 24,48

XGA or VGA format when still picture photographing mode selected and thinning out by 3 when moving picture photographing mode selected.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 6486

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-07-2004

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0859511	A	19-08-1998	JP	10075419 A	17-03-1998
			JP	10075420 A	17-03-1998
			EP	0859511 A1	19-08-1998
			US	6356709 B1	12-03-2002
			ID	18455 A	09-04-1998
			WO	9809436 A1	05-03-1998
WO 9827733	A	25-06-1998	US	6108027 A	22-08-2000
			WO	9827733 A1	25-06-1998
			US	6075554 A	13-06-2000
EP 0595544	A	04-05-1994	EP	0595544 A2	04-05-1994
			JP	6225279 A	12-08-1994
			US	5982437 A	09-11-1999
GB 2281803	A	15-03-1995	JP	3020595 B2	15-03-2000
			JP	4179379 A	26-06-1992
			GB	2281804 A , B	15-03-1995
			GB	2281805 A , B	15-03-1995
			GB	2281806 A , B	15-03-1995
			GB	2281807 A , B	15-03-1995
			GB	2281808 A , B	15-03-1995
			DE	4137538 A1	21-05-1992
			DE	4143526 C2	09-05-1996
			DE	4143527 C2	09-05-1996
			FR	2669172 A1	15-05-1992
			GB	2250625 A , B	10-06-1992
			US	5867628 A	02-02-1999
			US	5784524 A	21-07-1998